

DIAMOND CORE DRILLING PROCESS: PART 1

Twin Metals Minnesota is currently conducting a Prefeasibility Study (PFS) for its proposed underground copper, nickel, platinum, palladium and gold (strategic metals) mine in northern Minnesota. The PFS is designed to examine and narrow the multitude of options for project details such as mine design, facility locations, mining rate, metallurgical processes, transportation and transmission corridors, and environmental protection strategies.

One prominent component of the PFS is “in-fill” drilling which provides Twin Metals detailed information about targeted mineral deposits, including the depth and breadth of the deposits, mineral content and other geologic features.

Twin Metals is proud to partner with Virginia, Minn. based IDEA Drilling as their main core drilling contractor. IDEA has developed an excellent guide to the process of diamond core drilling. Mine Reader will highlight key parts of that guide in a two-part series. To review IDEA’s drilling guide, please visit: www.ideadrilling.com/pdf/Idea_Booklet_01GWithLinks.pdf.

STEPS IN THE DIAMOND CORE DRILLING PROCESS

1. Drill holes begin with installing a pipe called casing from the surface through soils and sealed into bedrock.
2. Diamond core drilling uses a diamond bit, which rotates at the end of a drill rod (or pipe) inside the casing.
3. The opening at the end of the diamond bit allows a solid column of rock to move up into the drill pipe and be recovered at the surface.
4. Most drill rods are 10 feet long. After the first 10 feet are drilled, a new section of pipe is screwed into the top end, so the combination of pipes can be drilled deeper into the ground.
5. The diamond bit is rotated with gentle pressure while being lubricated with water and drilling fluid to prevent overheating.



(Step 3)



(Step 4)

SOURCE: IDEA Drilling LLC, “Bedrock Core Drilling: Mineral Exploration in Minnesota”